

USSR

NIKOGOSYAN, S. V., Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, 1971, pp 49-51

zabolevaniy AMN SSSR (Works of the Laboratory of Radio Frequency Electromagnetic Fields, Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR), Moscow, 1964, No 2, p 105.

7. Kitsovskaya, I. A., "Effect of Radio Frequency Electromagnetic Fields on the Animal Nervous System," author's abstract of a candidate's dissertation, Moscow, 1968.
8. Lobanova, Ye. A., and Z. V. Gordon, Trudy In-ta gigiyeny truda i professional'nykh zabolevaniy (Works of the Institute of Industrial Hygiene and Occupational Diseases), Moscow, 1960, No 1, p 52.
9. Kholodov, Yu. A., Vliyaniye elektromagnitnykh i magnitnykh poley na tsentral'nuyu nervnuyu sistemu (Effect of Electromagnetic and Magnetic Fields on the Central Nervous System), Moscow, 1966.
10. Fukalova, P. P., Trudy Laboratorii elektromagnitnykh poley radio-chastot In-ta gigiyeny truda i professional'nykh zabolevaniye AMN SSSR, (Works of the Laboratory of Radio Frequency Electromagnetic Fields, Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR), Moscow, 1964, No 2, p 144.

6/6

USSR

UDC 615.777/.779:545:81

NIKOKAYEV, A. V., (Deceased), Doctor of Biological Sciences, and TRONDINA, G. A., Junior Scientific Associate, All Union Institute of Experimental Veterinary Medicine

"Colorimetric Determination of Methylnitrophos in Water"

Moscow, Veterinariya, No 1, Jan 71, p 111

Abstract: The proposed method of colorimetric determination of methyl-nitrophos in water is based on extraction of the pesticide with diethyl ether, evaporation of the solvent, and hydrolysis of methylnitrophos with an alkali to form p-nitrocresolate, which is yellow in color and can be determined in a colorimeter. The amount of methylnitrophos present in a sample is determined from a previously constructed calibration curve. Field tests showed that the relative error of the method averaged 11%. As little as 5 μ g of methylnitrophos (0.1 mg/liter) can be detected in a sample. The method is ineffective if p-nitrophenol, p-nitrocresol, metaphos, thiophos, or other pesticides containing a nitro group are present.

1/1

UDC 53.07/.08+53.001.5

USSR

KUZNETSOV, V. A., NIKOLASHIN, ZH. P., FOGEL'SON, M. S.

"Obtaining and Studying Uncompensated and Structurally Complete Single Crystals of Silicon Highly Doped With Arsenic"

V sb. Kremniy i germaniy (Silicon and Germanium -- Collection of Works), No. 2, Moscow, "Metallurgiya," 1970, pp 82-84 (from RZh-Fizika, No 1, Jan 71, Abstract No 1A884)

Translation: Ge single crystals doped with As up to concentrations of $1 \cdot 10^{15}$ - $4 \cdot 10^{19}$ at/cm³ were obtained and studied. Conditions for growing and selecting the material to ensure obtaining Ge. of perfect structure with a low degree of compensation are given. The variation, with temperature, of the specific resistance and Hall coefficient and the spectra of the electron paramagnetic resonance in the temperature interval 1.7-10°K confirm the low degree of compensation and the perfection of the structure of Ge single crystals highly doped with As. Authors abstract.

1/1

- 38 -

1/2 024 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--THE NUMBER OF REJECTS HAS BEEN MARKEDLY REDUCED -U-
AUTHOR--NIKOLAYCHENKOV, S. N
COUNTRY OF INFO--USSR
SOURCE--SOTSIALISTICHESKAYA INDUSTRIYA, JULY 18, 1970, P 2, COLS 1-3
DATE PUBLISHED--18JUL70
SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, MECH., IND., CIVIL AND
MARINE ENGR
TOPIC TAGS--INDUSTRIAL PROGRAM, TUNGSTEN, MOLYBDENUM, INDUSTRIAL
PRODUCTION, WELDING TECHNOLOGY, HYDROCHLORIC ACID
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/1252 STEP NO--UR/0533/70/000/000/0002/0002
CIRC ACCESSION NO--AN0118301
UNCLASSIFIED

2/2 024
CIRC ACCESSION NO--AN0118301
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT. RESPONDING TO THE GOVERNMENT AND PARTY LETTER ON "THE MORE EFFICIENT UTILIZATION OF INDUSTRIAL POTENTIAL", THE "POBEDIT" PLANT HAS DEVELOPED A PROGRAM AIMED AT IMPROVING THE QUALITY OF PRODUCTION AND REDUCING THE WASTE. AMONG THE INNOVATIONS MENTIONED IN THE AUTOMATION OF THE CARBURIZATION AND WELDING OF TUNGSTEN AND MOLYBDENUM SLUGS, AND THE SUBSTITUTION OF A NEW CHEMICAL FOR EXPENSIVE HYDROCHLORIC ACID USED IN THE PRODUCTION OF TUNGSTEN, MOLYBDENUM, AND COBALT SALTS. ENGINEER I. BARANYUK, SENIOR SINTER MAN L. KOROTCHENKO, PRESS OPERATOR K. S. SEMENOV, AND A GROUP OF INNOVATORS CONSISTING OF YU. DZOTSOYEV, M. BOGDANOV, I. GLAZUNOV, L. SMIRNOV, AND YA. KESEL, BRENER ARE MENTIONED.

FACILITY: POBEDIT PLANT.

UNCLASSIFIED

which the core is carried to the dryer. The
part (3) which is permanently clamped on a support
plate (4). The sand is blown (5) through ports (6)
into the core box. After forming, the table (7)
lowers and the core is carried to the dryer.

25.4.67 as 1154110/22-2. NIKOLAI CHIR. M. P. (5.8.68)
Bul 16/7.5.68. Class: 31 5. Lit. Cl. B 22 c.

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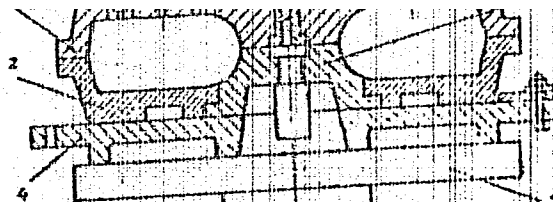
UR 0482

Soviet Inventions Illustrated, Section I. Chemical, Darwent,

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"APPROVED FOR RELEASE: 09/17/2001

CIA-RDP86-00513R002202220008-3



APPROVED FOR RELEASE: 09/17/2001

CIA-RDP86-00513R002202220008-3"

UDC 621.382.002

USSR

GAYSINSKIY, V.B., GAL'CHINETSKIY, L.P., GRIGOR'YEV, A.N., KOSHKIN, V.M., KULIK, V.N., NIKOLAYCHUK, L.I., PIVOVAR, L.I., RAYSKIN, E.K., SYSOYEV, L.A., FAYNER, M.SH.

"Ion Implantation Of Single Crystals Of Cadmium Sulfide"

V sb. Monokristally i tekhnika (Single Crystals And Technology--Collection Of Works), Issue 6, Khar'kov, 1972, pp 109-112 (from RZh:Elektronika i yeye primeneniye, No 11, Nov 1972, Abstract No 11B459)

Translation: The effect was studied of the dose and energy of irradiation by lithium ions in the temperature range from minus 70 to plus 180° C on the conductivity of cadmium sulfide. A divergence is found between the theoretically calculated value of the depth of penetration of lithium ions and the experimental results. These divergences are accounted for by the marked differences of the structures of the surface layer and the volume of the crystal. With the aid of ion implantation piezosemiconductor transducers were produced based on a high-resistance layer in CdS. Summary.

1/1

Acc. Nr: **AF0037844**

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy
Fiziki, 1970, Vol 58, Nr 1, pp **97-103**

**COLLISIONS OF FAST Li, Na AND K ATOMS AND IONS WITH
ALKALI METAL AND NOBLE GAS ATOMS (25-155 keV)**

Pivovar, L. I.; Nikolaychuk, L. I.

The cross sections for electron loss and the equilibrium charge distribution in Li^+ , Na^+ and K^+ ion beams traversing Na or K vapor or He, Ne and Ar gases are measured. The cross sections for electron loss by fast Li, Na and K atoms are determined on basis of data on equilibrium charge distributions and the data from paper [2]. The cross sections for electron capture by doubly charged Li^{2+} , Na^{2+} and K^{2+} ions are presented. The largest values of the ionization cross sections of fast atoms are observed in collisions between identical alkali metal atoms.

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Acc. Nr: **AP0051902** **N**

Ref. Code: **UR045**

PRIMARY SOURCE: Vrachebnoye Delo, 1970, Nr 2, pp 29-32

NONACIDOTIC DIABETIC COMA AND ITS TREATMENT
(SURVEY OF LITERATURE)

L. V. Nikolaiukh (Kharkov)

Nonacidotic coma is a rare and peculiar complication of diabetes mellitus. The predisposing factors are discussed of the development of hyperosmotic non-acidotic coma, peculiarities of its clinical course, complications, outcomes, pathogenetic principles of treatment and prophylaxis.

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REEL/FRA
19820385

4

USSR

UDC 615.31:547.827

MANUSHONAK, N. I., PIS'KO, G. T., BURYAK, V. S., KUCHER, V. I.,
~~NIKOLAYCHUK, E. A., KARINKOVSKAYA, R. B., NEVSKAYA, T. L. and~~
~~ZAPOLOZ'ETS, V. I.~~; Chernovtsy University

"Synthesis and Certain Biological Properties of Piperidine Derivatives"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 5, No 9, 1971, pp 8-14

Abstract: Piperidine derivatives have a wide range of biological action, and many of them are now used in medical practice. However, the biological action depends largely upon the nature of the substituents introduced, both at the nitrogen atom, and at the carbon atoms of the piperidine ring. Meanwhile, those compounds substituted with fatty-aromatic radicals at the nitrogen atom which have multiple carbon-carbon bonds have been very little studied. The authors studied 23 members of this group to determine their biological action on test animals (cats, white mice), and to determine basic physico-chemical properties. Increased toxicity, effect on blood pressure, and strengthened heart bioelements were observed in many cases. Data obtained are summarized in tabular form.

1/1

USSR

UDC 669.725:539.374

IVANOV, V. YE., TIKHINSKIY, G. F., SHPAGIN, I.V., KORNIYENKO, L.A., KHRISTENKO, I.N., and NIKOLAYENKO, A.A., Physicotechnical Institute of the Academy of Sciences USSR

"The Effect of Admixtures on the Cold Brittleness of Beryllium"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 6, Jun 71, pp 1286-1292

Abstract: The dependence of the transition temperature of beryllium from the brittle into the plastic state on the metal purity is investigated. This dependence is very sharply expressed at low concentrations ($\sim 0.05\%$) of the admixtures. By the replica method and the transmitting electron-microscopy method, the deformation mechanism and the desintegration character of beryllium at temperatures corresponding to the brittle and plastic states was studied. The contribution of turning to deformation and the potential to brittle failure on cleavage elements decrease with increasing purity; further, in the pure metal there appears the possibility of a light slipping on grain boundaries. The strength of beryllium increases with increasing bending test temperature up to the transition temperature from there brittle to the plastic state, which is connected with the decreased tendency of beryllium to brittle failure on cleavage elements. Six illustr., one table, 21 biblio. refs.

1/1

Beryllium

U.S.S.R.

USSR

UDC 669.725:539.377

AVOTIN, S. S., PAPIROV, I. I., TIKHINSKIY, G. F., KORNIYENKO, L. A., and
NIKOLAYENKO, A. A., Physicotechnical Institute, Academy of Sciences, Ukrainian
 SSR

"Bend Tests on High-Purity Beryllium"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 32, No 1, Jul 71, pp 123-130

Abstract: An investigation of beryllium single crystal plastic deformation was carried out by bending in the temperature region of 77-300°K. The nature of the stressed state in bend depends essentially on the ratio of sample width to thickness (b/h) and on the geometrical conditions of testing. Single crystals of beryllium with $b/h = 2$ with three orientations (force parallel to a-axis, force parallel to b-axis, and force parallel to c-axis for hexagonal beryllium) were subjected to a force with a load rate of 0.2 mm/min; the distance between supports was 10 mm. The crystals were produced by zone melting and cut by a electric arc. Relative residual electrical resistance of a single crystal was $\rho_{rel}/\rho_{300K} = 0.005-0.006$ and for polycrystalline beryllium--0.004. The samples were mechanically polished, and annealed in a vacuum of 10^{-6} torr at 700°C (polycrystals) and at 1200°C (single crystals) for 20 minutes. This study permitted explanation of the slip of screw dislocations with a Burgers vector c and dislocation type $(c+a)$. For
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AVOTIN, S. S., et al., Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 32, No 1, Jul 71, pp 123-130

ordinary forms of strain (tension and compression) and low temperatures the indicated forms of strain were not previously observed. A study of the temperature relationship of bending ductility showed that single crystals with a b-axis orientation of force (force parallel to b-axis) have a bend angle greater than 90° down to 77°K while the most ductile single crystals were those with the force applied along the a-axis. An anomaly was observed in the temperature relationship of yield strength in single crystals with the force applied along the c-axis. On the basis of the change in strain with temperature, the conclusion was made that there is a change in transverse slip with temperature. Six figures, 24 bibliographic references.

1/2

- 7 -

172 032 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--FORMATION OF A POLYGONIZED AND A CELLULAR STRUCTURE IN BERYLLIUM
-U-
AUTHOR--(05)--KORNIYENKO, L.A., TARANENKO, I.A., TIKHINSKIY, G.F.,
NIKOLAYENKO, A.A., PAPIROV, I.I.
COUNTRY OF INFO--USSR
SOURCE--FIZIKA METALLOV I METALLOVEDENIE, VOL. 29, MAR. 1970, P. 619-624
DATE PUBLISHED--MAR70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--BERYLLIUM ALLOY, METAL MICROSTRUCTURE, BIBLIOGRAPHY, HIGH
PURITY METAL, METAL DEFORMATION, ANNEALING, THERMAL EFFECT, STRAIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0070

STEP NO--UR/0126/70/029/000/0619/0624

CIRC ACCESSION NO--AP0125905

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--20NOV70

2/2 032

CIRC ACCESSION NO--APC125905

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. STUDY OF THE EFFECTS OF TEMPERATURE, DEGREE OF STRAIN, ANNEALING CONDITIONS, AND MATERIAL PURITY ON THE FORMATION OF POLYGONIZED AND CELLULAR STRUCTURES OF BERYLLIUM. IT IS FOUND THAT THE POLYGONIZATION OF BERYLLIUM IS MOST PRONOUNCED IN METAL ROLLED AT A SMALL REDUCTION AT TEMPERATURES RANGING FROM 600 TO 700 DEG C. FOR OBTAINING A CELLULAR STRUCTURE, HEAVILY DEFORMED BERYLLIUM SHOULD BE ANNEALED FOR ABOUT 1 MIN AT TEMPERATURES RANGING FROM 850 TO 900 DEG C.

FACILITY: AKADEMIIA NAUK UKRAINSKOE SSR,

FIZIKO-TEKHNICHESKII INSTITUT, KHARKOV, UKRAINIAN SSR.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--RECRYSTALLIZATION OF ROLLED BERYLLIUM -U-
AUTHOR--(04)-KORNIYENKO, L.A., NIKOLAYENKO, A.A., PAPIROV, I.I.,
TIKHINSKIY, G.F.
COUNTRY OF INFO--USSR
SOURCE--FIZ. METAL. METALLOVED. 1970, 29(1) 138-42
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--METAL RECRYSTALLIZATION, BERYLLIUM ALLOY, METAL ROLLING,
CRYSTAL DISLOCATION, METAL DEFORMATION, GRAIN GROWTH
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FAME--1988/0689 STEP NO--UR/0126/70/029/001/0138/0142
CIPC ACCESSION NO--AP0105665
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--18SEP70

2/2 024

CIRC ACCESSION NO--AP0105665
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE KINETICS OF RECRYSTN. AND GRAIN GROWTH WERE STUDIED IN DEFORMED BE AS RELATED TO THIN STRUCTURE. INVESTIGATED WAS THE DISLOCATION STRUCTURE OF BE ROLLED AT 400, 600, AND 800DEGREES WITH THE DEGREE OF DEFORMATION OF 88PERCENT, AS WELL AS OF BE ANNEALED AT 700-1000DEGREES FOR 15 SEC TO 24 HR. THE ACTIVATION ENERGIES OF NEW GRAIN FORMATION AND THEIR GROWTH WERE 75 AND 51 KCAL-G-MOLE, RESP. THE HIGH ACTIVATION ENERGY VALUES ARE EXPLAINED ON THE BASIS OF THE DISLOCATION STRUCTURE OF THE DEFORMED METAL. THE FUNDAMENTAL ELEMENT OF THE DISLOCATION STRUCTURE IS THE PILING UP OF DISLOCATIONS INTO WALLS OR CLOUDS, FORMED BY COMPLEX INTERLACING OF LINEAR DEFECTS. THE CELLULAR STRUCTURE APPEARS BUT RARELY. DISLOCATION NETWORKS ARE FORMED ESP. AT HIGH DEFORMATION TEMPS. (800DEGREES). NEAR THESE NETWORKS THERE ARE FREQUENTLY SEEN CHARACTERISTIC INDIVIDUAL DISLOCATIONS. BESIDES SUCH CLUSTERS OF DISLOCATIONS, MATRIX SECTIONS 10 20 MU IN SIZE ARE OBSO. WHICH DO NOT CONTAIN A LARGE NO. OF IMPERFECTIONS PRESENT, WITH THE EXCEPTION OF PERHAPS A FEW DISLOCATION LOOPS. THE KINETICS OF THE PROCESSES TAKING PLACE DURING ANNEALING OF BE IS DETD. BY THE STRUCTURE OF THE DEFORMED METAL, WHICH IN TURN DEPENDS ON THE TEMP. AND THE DEGREE OF DEFORMATION.

UNCLASSIFIED

Beryllium

UDC 669.725:548.53

USSR

KORNIYENKO, L.A., NIKOLAYENKO, A.A., PAPIROV, I.I., and TIKHINSKY, G.F.,
Physicotechnical Institute, Academy of Sciences, Ukr SSR

"Recrystallization of Rolled Beryllium"

Sverdlovsk, Akademiya Nauk SSSR, Fizika Metallov i Metallovedeniye, Vol 29, No 1,
Jan 70, pp 138-142

Abstract: An investigation was made of the kinetics of recrystallization and growth of grains in strained beryllium as a function of its thin structure. The procedure for the preparation of the experimental samples is described. The dislocation structure of strained beryllium hot rolled at 400, 600, and 800°C, with 88% deformation was investigated by optical and electron microscopy. Photographs of the dislocation structures of strained beryllium at various temperatures are presented and analyzed. The kinetics of new grain formation at primary recrystallization and their growth with collective recrystallization are studied. The results show that at high annealing temperature (950-1000°C) the growth rate slows down, and that the time prior to recrystallization depends exponentially on the inverse value of the annealing temperature.

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USSR

KORNIYENKO, L.A., et al, Akademiya Nauk SSSR, Fizika Metallov i Metallovedeniye, Vol 29, No 1, Jan 70, pp 138-142

The activation energies of the primary recrystallization of grains and their growth with collective recrystallization are 75 ± 5 and 51 ± 4 Kcal/g x mol, respectively. The dependence of the average grain size on annealing time with collective recrystallization is satisfactorily described by the formula $D = D_0 t^n$ and is presented in graphs for various rolling temperatures. The values of n for definite temperatures are given in a table. The high values of activation energies are explained on the basis of the dislocation structure of the deformed metal.

Orig. art. has: 4 figures, 3 formulas, and 1 table.

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DIKOLAYENKO E.G.

UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent,

227545 SAND BLOWER where construction simplifies the change over when coating castings of a different size and type, consists of sand box 1 and blow plate 2 with nozzles 3. The box 5 is mounted on the frame 4 of the machine. Carriage 6 moves inside the box and has a set of perforated plates 7. Position of openings in the plates corresponds to the position of the blow openings in the casting. Valves 8 are fixed to one side of the box and each valve is connected to the one of the nozzles 3. When piston 9 moves in the cylinder 10 to the right oil goes through all valves and closes/pinches all nozzle throats. When piston 9 moves to the left it actuates carriage mechanism 11 which pushes the carriage towards the valves. Perforated plate contacts the stems of valves 8. Stems in line with the openings in the plate go through them and therefore only some of the

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valves are operated, depending upon the lay-out of the perforations. The valves which are actuated by the blanks in the plate close oil supply to the nozzles and the corresponding nozzles open allowing the discharge of sand to take place. For coating of the subsequent casting the carriage is moved until the second plate with a different lay-out of the openings is in line with the valves.

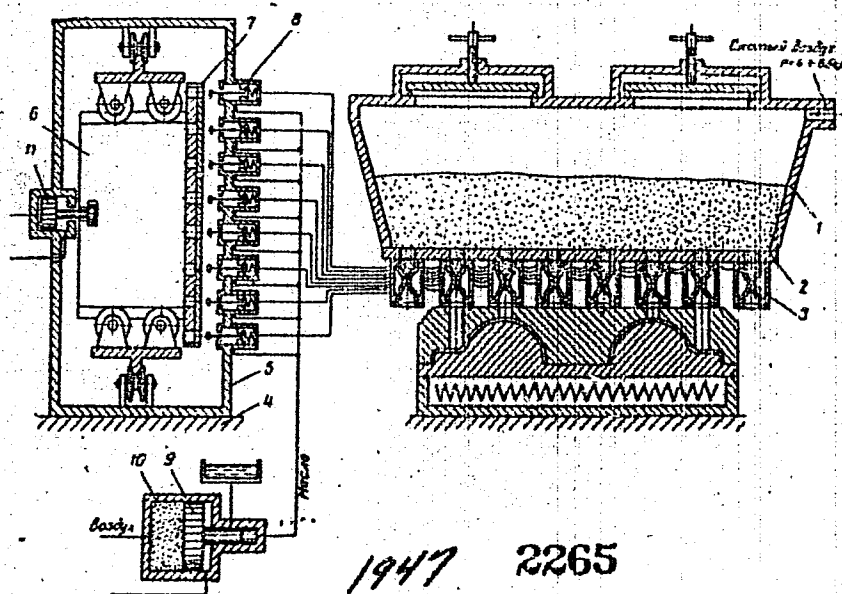
21.12.65 as 1044418/22-2 E.G. NIKOLAENKO et al.
Ind. Plant & Instruments Central Design Office
(13.2.69) Bul. 30/25.9.68. Class 31b, Int. Cl.
B 22c.

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AA9049255



Physiology

USSR

UDC 617.761-009.24-02:612.014.47:531.113

SAVOSTIN, V. A., and NIKOLAYENKO, L. A.

"Frequency and Duration of Nystagmus in Response to Angular Acceleration of Various Intensities"

Moscow, Vestnik Otorinolaringologii, No 6, Nov/Dec 70, pp 63-67

Abstract: Stimulation of the vestibular apparatus in 25 apparently healthy boys 14 to 16 years of age was achieved by: (1) positive and negative angular acceleration ($+6.4 \text{ deg/sec}^2$ and $+12.8 \text{ deg/sec}^2$; duration 9.4 sec in both cases) in a rotating chair; and (2) "stop stimuli" of 12, 18, 30, 60 and 90 deg/sec (time of halting the chair, 0.2 sec). The frequency of nystagmus was found to vary with the intensity of acceleration, i.e., the greater the acceleration, the more frequent the nystagmus. The frequency of nystagmus in response to "stop stimuli" was also related to the intensity of the stimulus and could be described by a logarithmic function. The nature of the change in frequency of nystagmus from the beginning to the end of the nystagmic reaction varied with the duration of acceleration. For example, in response to acceleration of relatively low intensity (6.4 deg/sec^2 or 12.8 deg/sec^2 for 9.4 sec), the change in frequency of nystagmus was curvilinear in

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USSR

SAVOSTIN, V. A., and NIKOLAYENKO, L. A., Vestnik Otorinolaringologii, No. 6,
Nov/Dec 70, pp 63-67

character. It is concluded that certain vestibular functions, at least with
certain limits, do not reflect the law of intensity of stimulation multiplied
by its duration.

USSR

UDC 621.791.92.011.669.13

NIKOLAYENKO, M. R., Engineer, KORTELEV, G. A., Candidate of Technical Sciences, Bryansk Affiliate of the All-Union Design-Technology Institute of Construction and Highway Machine Building

"Effect of Boron, Vanadium, and Nickel on the Structure and Properties of High-Chromium Irons Surfaced with Powdered Strip"

Moscow, Svarochnoye Proizvodstvo, No 4, Apr 73, pp 32-34

Abstract: The relationship between the chemical composition, structure, and properties of Fe-C-Cr alloys was studied for alloys which contained, on the average, 20 and 25% Cr, 1.0 and 2.7% C, and boron, vanadium, and nickel (individually and jointly). Samples of St3 steel measuring 300 x 100 x 20 mm, were surfaced with specially manufactured powder strips 45 mm wide using d.c. current of reversed polarity under AN-60 flux. It was established that alloying Fe-C-Cr alloys of the U25Kh25 and U25Kh20 types with boron sharply increases their wear resistance due to the formation of borides of the type $Cr_2(B,C)$, $Cr(B,C)$, and $M_{23}(C,B)_6$ and lowers their ductility due to increased brittleness of the base metal. When alloying Fe-C-Cr alloys with vanadium the wear resistance is increased only when vanadium carbides of the type VC develop (V content greater than 2%), and ductility of these alloys is increased due to lowering of base-metal hardness. With the combined alloying of Fe-C-Cr

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USSR

NIKOLAYENKO, M. R7, et al., Svarochnoye Proizvodstvo, No 4, Apr 73, pp 32-34
alloys with B, V, and Ni, the alloy containing (in %) 2.6 C, 24 Cr, 0.6 B,
1.6 V, 1.5 Ni, 2-8-3.2 Mn and 0.9-1.2 Si possesses optimum properties.
One figure, two tables, five bibliographic references.

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- 73 -

1/2 030

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--THE TEMPERATURE OF THE WELD POOL DURING SEAM WELDING WITH SINTERED
ELECTRODE -U-

AUTHOR-(03)-KORTELEV, G.A., NIKOLAYENKO, M.R., SHEVCHENKO, G.D.

COUNTRY OF INFO--USSR

SOURCE--SVAR. PROIZV., JAN. 1970, (1), 2-3

DATE PUBLISHED----JAN70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, METHODS AND EQUIPMENT

TOPIC TAGS--SEAM WELDING, TEMPERATURE DISTRIBUTION, THERMOCOUPLE, WELDING
ELECTRODE, WELD ZONE, LIQUID METAL PROPERTY, SINTERED ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAHE--3007/1279

STEP NO--UR/0135/70/000/001/0002/0003

CIRC ACCESSION NO--AP0136685

UNCLASSIFIED

2/2 030

CIRC ACCESSION NO--AP0136685
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT. THE METHOD USED TO STUDY THE TEMP. DISTRIBUTION IN THE WELD POOL DURING SEAM WELDING IS DESCRIBED AND THE APPARATUS ILLUSTRATED. MEASUREMENTS WERE MADE BY FIVE (W-MO MINUS 5PERCENT AL) THERMOCOUPLES, SHIELDED BY QUARTZ TUBES, IMMERSSED IN THE BATH AT DIFFERENT POINTS AND CARRIED BY THE WELDING ELECTRODE. RESULTS FOR DIFFERENT WELDING CONDITIONS ARE PRESENTED IN GRAPHICAL FORM.

UNCLASSIFIED

USSR

UDC: 538.4

KLEMENTOV, A. D., MIKHAYLOV, G. V., NIKOLAYEV, F. A., ROZANOV, V. B.,
SVIRIDENKO, Yu. P.

"High-Current Pulse Discharge in Lithium"

V sb. Vopr. fiz. nizkotemperaturn. plazmy (Problems in the Physics of Low-
-Temperature Plasma--collection of works), Minsk, "Nauka i tekhn.", 1970,
pp 269-275 (from RZh-Mekhanika, No 4, Apr 71, Abstract No 4B52)

Translation: The authors report on a study of a high-power pulse source
of light produced by an electric discharge in a lithium plasma as the
working medium. A cylindrical chamber with quartz walls was used with an
inside diameter of approximately 90 mm, the distance between the steel
hemispherical electrodes being 145 mm. The chamber was evacuated to a
pressure of 10^{-5} mm Hg. The lithium wire was 0.1 mm in diameter. The dis-
charge developed in lithium vapor formed by an electric explosion. The
discharge was fed from two condenser banks -- a main bank and an auxiliary
bank with energy capacities of 22 and 4.5 kJ respectively. The pulse from
the auxiliary bank was delayed by 25 μ s relative to the beginning of

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USSR

KLEMENTOV, A. D., Vopr. fiz. nizkoterturn. plazmy, Minsk, "Nauka i tekhn.", 1970, pp 269-275

the discharge from the main bank. The duration of the first half-cycle of the current discharge from the main bank was 75 μ s with a corresponding figure of 15 μ s for the auxiliary bank. The current and voltage of the discharge were determined by a Rogowski loop and a voltage divider. The dynamic process of development of the discharge filament was recorded by the SFR instrument operating in the single-frame mode at a rate of 10^6 frames per second. Emission from the central zone of the discharge was registered by a spectrograph with time scanning and in the integrated exposure mode.

It was found that the discharge develops only in the exploding wire vapors. The discharge filament expanded at a nearly constant rate of approximately 1.3 km/s, reaching the walls of the chamber about 50 μ s after beginning of the current pulse. Brightness distribution through the discharge filament is nonuniform,, which is due to localized non-uniformities of density and temperature. Discharge emission consists of an intense continuous spectrum which carries the main part of the energy, and superimposed complex line emission, which is analyzed. It is found that maximum brightness temperature in the 250 nm region is 17,000°K. Emission during the second half-cycle of the current is considerably weaker -- the

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- 40 -

USSR

KLEMENTOV, A. D. et al., Vopr. fiz. nizkoterperaturn. plazmy, Minsk, "Nauka i tekhn.", 1970, pp 269-275

brightness temperature is 12,000°K. The spectral brightness distribution in the maximum current pulse (300 kA) is not described by the curve for black-body radiation of a definite temperature. A comparison of the luminous characteristics of a discharge in lithium and xenon tubes shows that with respect to the overall emission output, the lithium discharge is equivalent to the most powerful pulse tubes, and considerably surpasses these tubes with respect to brightness characteristics in the visible, and especially in the ultraviolet, spectral regions. O. K. Rozanov.

USSR

UDC: 533.92

VEKHOV, A. A., ~~NIKOLAYEV, E. A.~~, ROZANOV, V. B., Physics Institute imeni
P. N. Lebedev, Academy of Sciences of the USSR

"Investigation of the Space and Time Distribution of the Optical Density
of High-Current Discharges of Indium and Lithium"

Moscow, Teplofizika Vysokikh Temperatur, Vol 10, No 4, Jul/Aug 72 pp
728-731

Abstract: The space and time distribution of optical density of a high-current discharge plasma in lithium and indium vapors is studied by the method of absorption of a helium-neon laser beam (6328 Å, 10 mW). The plasma was produced by exploding wires in a vacuum with typical Z-pinch geometry. The wire diameter was 0.1 and 0.17 mm for lithium, and 0.17 mm for indium. A glass discharge chamber was used with an inside diameter of 10 cm. Electrode spacing was 14.5 cm. The current pulse was made up of two half-periods produced by introducing a total energy of 17 kJ into the chamber with 14 kJ of the total falling to the first half-period (70 μs). The optical density κl was determined from the relation

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USSR

VEKHOV, A. A. et al., Teplofizika Vysokikh Temperatur, Vol 10, No 4,
Jul/Aug 72, pp 728-731

$$J = J_0 \exp(-\kappa l)$$

where J_0 , J are the fluxes of the quanta incident on the plasma and passing through the plasma respectively, κ is the coefficient of absorption, and l is the thickness of the absorbing layer. It was found that the optical density of a plasma filament is radially nonuniform with a maximum at a certain distance from the discharge axis. A model of discharge development is discussed according to which the plasma has a maximum temperature at the center of the discharge. The authors thank V. G. Bakayev for assisting with the experiment, and G. V. Mikhaylov for constructive criticism.

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- 37 -

USSR

UDC: 539.4:624.011

NIKOLAYENKO, N. A., SHTOL', A. T.

"Statistical Analysis and Evaluation of Parametric Systems Subjected to Seismic Effects"

Tr. TsNII stroit. konstruktsiy (Works of the Central Scientific Research Institute of Structural Elements), 1970, vyp. 14, pp 4-11 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7V863)

Translation: The authors consider the problem of forced oscillations of a structural element in the form of a rod of constant cross section and rigidity with a concentrated mass on the end in the case of horizontal and vertical seismic motion of the base. The equation of motion of the rod is derived by the Bubnov-Galerkin method. The nonlinear inertial properties of the attached mass and power-law nonlinear elasticity of the system are taken into account. Critical values of the coefficient of parametric excitation are determined in solving the equation by the method of stochastic differential equations. The boundaries of the regions of dynamic stability coincide for the average and root-mean-square values of amplitudes. In solving the problem by the Fokker-Planck-Kolmogorov method, the

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NIKOLAYENKO, N. A., SHTOL', A. T., Tr. TsNII stroit. konstruktsiy, 1970, vyp. 14, pp 4-11

motion of the system was assumed to be close to quasiharmonic with slowly varying amplitude and phase. The probability density functions and the first three moments of motion of the system are found. It is shown that the region of dynamic instability differs from the boundaries found with simplifying assumptions. The concept of parametric stability of the system is related to the probability that the coefficient of excitation will not fall into the region of dynamic instability. L. Sh. Kilimnik.

UDC: 534.11:519.2:624.04

USSR

NIKOLAYENKO, N. A. and UL'YANOV, S. V. (Moscow)

"Statistic Analysis of Parametric Systems Under Random Dynamic Effects"

Moscow, Stroitel'naya Mekhanika i Raschet Sooruzheniy, No 2 (80), 1972, pp 4-9

Abstract: The authors study unsteady, nonlinear systems with a random structure and one degree of freedom. Methodology is proposed for determining the distributed density functions for the motion probabilities of similar systems. The methodology is based on the solution of the appropriate Fokker-Planck-Kolmogorov equations. Complete statistical characteristics are obtained for the amplitude of motion of the systems studied. The proposed methodology makes it possible to avoid complex calculations in solving mixed type integral equations and can be used effectively in the study of some elasto-plastic systems, for example those with Prandtl's diagram. Original article: two figures, 35 formulas, and seven bibliographic entries.

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- 104 -

1/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--CRITERIA OF RECOVERY FROM DIFFUSE TOXIC GOITER -U-
AUTHOR-(02)-BARANOV, V.G., NIKOLAYENKO, N.F.
COUNTRY OF INFO--USSR
SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 4, PP 50-53
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--GOITER, THYROID HORMONE, CHEMOTHERAPY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0747

STEP NO--UR/0497/70/048/004/0050/0053

FILE ACCESSION NO--AP0131342

2/2 018

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0131342

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN 68 WOMEN SUFFERING FROM DIFFUSE TOXIC GOITER THE AUTHORS STUDIED THE DYNAMICS OF RADIOIODINE ABSORPTION BY THE THYROID GLAND AND CONDUCTED TESTS WITH TRI, IODOOTHYRONINE IN THE PROCESS OF PROLONGED (FROM 1 TO 4 AND ONE HALF YEARS) MERCASOLYL THERAPY. NORMALIZATION OF RADIOIODINE ABSORPTION BY THE THYROID GLAND AND TESTS WITH TRI, IODOOTHYRONINE POINT TO RECOVERY FROM THE DISEASE AS THE RESULT OF PROTRACTED TREATMENT WITH MERCASOLYL. THE DURATION OF EMPLOYMENT OF "MAINTENANCE" DOSES OF MERCASOLYL IS DETERMINED BY THE TIME OF NORMALIZATION OF ABSORPTION AND THE TEST WITH TRI, IODOOTHYRONINE.

FACILITY: KAFEDRA ENDOKRINOLOGII LENINGRAD. INSTITUTA USOVERSHENSTVOVANIYA VRACHEY IM. S. M. KIROVA, OTDEL ENDOKRINOLOGII INSTITUTA AKUSHERSTVA I GINEKOLOGII AMN/SSSR, LENINGRAD.

UNCLASSIFIED

USSR

UDC: 621.375.4:621.372.57(02)

NIKOLAYENKO, N. S.

"Synthesis of Transistorized Amplifiers and Filters"

Sintez tranzistornykh usiliteley i fil'trov (cf. English above), "Energiya", 1970, 239 pp, ill. 95 k. (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12D86 K)

Translation: Methods are discussed for synthesizing wide-band amplifiers and active filters based on transistors. These methods are based on using poles and zeros of transfer functions pre-approximated by module or phase. The amplifiers are synthesized by using the parameters of the equivalent transistor T-circuit. It is shown that the basic correcting links in the case of transistorized amplifiers are feedbacks. Examples are given of the design of video amplifiers with a predetermined transfer function. Methods and examples are given of calculating active RC filters based on amplifiers with negative or positive feedback. The sensitivity of the characteristics of the links to changes in the parameters of the filter elements is computed. Examples are given of engineering design of filters. Resumé.

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1/2 015 UNCLASSIFIED PROCESSING DATE—30OCT70
TITLE—SYNTHESIS OF TRANSISOTRIZED AMPLIFIERS WITH MULTILoop FEEDBACK -U-

AUTHOR—NIKOLAYENKO, N.S.

COUNTRY OF INFO—USSR

SOURCE—RADIOTEKHNIKA I ELECTRONIKA, VOL 15, MAY 1970, P. 970-975

DATE PUBLISHED—MAY70

SUBJECT AREAS—ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS—TRANSISTORIZED AMPLIFIER, FEEDBACK AMPLIFIER, ELECTRONIC
FEEDBACK

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAme—2000/0281

STEP NO—UR/0109/70/015/000/0970/0975

CIRC ACCESSION NO—AP0124040

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124040

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF A SYNTHESIS
PROCEDURE FOR TRANSISTORIZED AMPLIFIERS WITH MULTILoop FEEDBACK, BASED
ON NIKOLAENKO'S PREVIOUSLY OBTAINED GENERAL EXPRESSIONS FOR AMPLIFIERS
WITH FEEDBACKS. AN EXAMPLE IS GIVEN FOR THE DETERMINATION OF FEEDBACK
ELEMENTS AND THEIR PARAMETERS IN A TWO STAGE AMPLIFIER WITH THREE LOOPS
OF PARALLEL FEEDBACKS.

UNCLASSIFIED

USSR

UDC 535

SECHKAREV, A. V., NIKOLAYENKO, P. T., ARTAMONOV, A.A., NEVZOROV, B. P.

"Distribution of Intensity in the Scattering Spectrum of the Light of Organic Liquids and Crystals in the Neighborhood of the Rayleigh Line"

V sb. Sovrem. probl. fiz. khimii (Modern Problems of Chemical Physics -- Collection of Works), Vol. 5, Moscow, Moscow University, 1970, pp 223-255 (from RZh-Fizika, No 7, Jul 71, Abstract No 7D917)

Translation: A theoretical treatment of the intramolecular scattering spectrum of liquids and crystals in the neighborhood of the Rayleigh line is given. It is shown that close to the points of phase transformations there should exist a continuous solid-liquid transition of the intramolecular scattering spectrum. Formulas are obtained describing the intensity as a function of the frequency in the spectrum of intramolecular oscillations of liquids consisting of anisotropic molecules. The distribution of intensity in the intramolecular scattering spectrum was studied in the region $15-200\text{ cm}^{-1}$ for benzene, piridene, n-dichlorobenzene, toluene, nitrobenzene, naphthalene, cyclohexane, cyclohexanol, NaNO_3 , and KNO_3 over a wide temperature interval covering the liquid and solid phases. A continuous transition was observed from the discrete spectrum of a crystal to the continuous spectrum of a liquid where the maximums produced by rotational oscillations of the molecules disappear under orientation melting. The spectra are given. 46 ref. E. V. B.

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USSR

N UDC 535.435.43 72

SECHKAREV, A. V., ARTAMONOV, A. A., NEVZOROV, B. P.,
NIKOLAYENKO, P. T., PROTASOV, N. M.

"Study of the Intermolecular Dynamics of Condensed States of Matter by the Vibrational Spectroscopy Method. III. Experimental Investigation of the Temperature-Phase Relationship of the Intermolecular Dispersion Spectra of Some Organic Compounds"

Tomsk, Izvestiya: Fizika, No 5, 1970, pp 7-12

Abstract: Results of research on intensity distribution in the intermolecular dispersion spectrum are presented for a broad temperature range. The authors established the fact of continuous transition of the discrete spectrum (solid phase) into the continuous spectrum (liquid phase) as well as the presence of maxima in the intermolecular spectrum of some classes of fluids, the redistribution of intensities with temperature, and other rules governing the behavior which may, with sufficient basis, be considered general for substances with different types of intermolecular bond. Theoretical consideration with account taken of the degree of molecule-vibration noncoherence made it

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USSR

SECHKAREV, A. V., et al, Izvestiya: Fizika, No 5, 1970, pp 7-12

possible to provide a qualitative, and, in a number of cases, quantitative interpretation of these rules and to define a series of molecular parameters for a whole group of substances.

2/2

- 112 -

USSR

UDC: 639.5:536.55

BARBASHIN, Ye. F., PUL'KIS, K. S., NIKOLAYENKO, V. A., Omsk

"Determination of Fields of Temperatures of Turbine Wheels and Blades by Indicators of Irradiated Diamond"

Kiev, Problemy Prochnosti, No 8, Aug 73, pp 117-119.

Abstract: A method is described for thermometry of gas-turbine engine parts using indicators of irradiated diamond without current taps. The method is based on the property of the crystalline diamond to increase the volume of the crystalline lattice when bombarded by high energy particles and gradual recovery of the initial volume upon heating. The method can be used for thermometry of turbine wheels and blades in the 130-1200° C interval without placement of current taps or modification of the engine design.

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USSR

UDC 536.5.539.893

NIKOLAYENKO, V. A., BANEYEVA, M. I.

"Measurement of Temperature in High Pressure Chambers Using Irradiated Diamond"

Sintetich. Almazy. Nauch.-Proyizn. Sb. [Synthetic Diamonds, Scientific and Production Collection], 1972, No 1 (19), pp 9-11, (Translated from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, 1972, No 5, Abstract No 5.32.832, by the author's).

Translation: Results are presented from experiments on annealing of irradiated diamond and graphite at 100-1,000°C and pressures up to 100 kbar. It is shown that annealing of defects responsible for expansion of crystal-line lattices of these materials is accelerated as pressure increases. This effect is explained by a decrease in activation energy of annealing of defects due to the elastic energy stored in the lattice in compression. The method can be used to measure temperatures in high pressure chambers. Indicators of a mixture of irradiated diamond and graphite powders can be used for simultaneous determination of temperature and pressure.

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1/2 012 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--DETERMINATION OF THE RESIDENCE TIME OF PARTICLES IN HOLLOW REACTION
VESSELS -U-
AUTHOR--(03)-NIKOLAYENKO, V.P., BUDKOV, V.V., AKOPYAN, L.A.
COUNTRY OF INFO--USSR
SOURCE--KHIM. PROM. UKR. 1970, (1), 24-6
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--DESIGN STANDARD, COMPUTER AIDED DESIGN, ALGEBRAIC EQUATION,
PARTICLE PHYSICS, PARTICLE MOTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/1748 STEP NO--UR/0436/70/000/001/0024/0026
CIRC ACCESSION NO--AP0112734

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0112734

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESIGN EQUATIONS ARE DEVELOPED FOR
COMPUTER CALCN. OF OPTIMUM HOLLOW (TUBE TYPE) SOLID, GAS REACTORS. THE
EQUATIONS YIELD EITHER RESIDENCE TIMES OF THE DESCENDING SOLIDS,
OPERATING PARAMETERS, OR REACTOR SIZE.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--STABILITY OF ECCENTRICALLY STIFFENED CIRCULAR CYLINDRICAL SHELLS
UNDER TORSION -U-
AUTHOR--(02)-KABANDV, V.V., NIKOLAYENKOVA, M.I. ✓
COUNTRY OF INFO--USSR
SOURCE--AKADEMIIA NAUK SSSR, IZVESTIIA MEKHANIKA TVERDOGO TELA JAN-FEB
1970, P 91-96
DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--CYLINDRIC SHELL STRUCTURE, REINFORCED SHELL STRUCTURE, TORQUE,
SHELL STRUCTURE STABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0178

STEP NO--UR/0484/70/000/000/0091/0096

CIRC ACCESSION NO--AP0054974

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054974

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE STABILITY OF AN ECCENTRICALLY STIFFENED THIN SHELL WITH A CLOSELY SPACED NETWORK OF STRINGERS AND RIBS UNDER TORSION. IN CONTRAST TO PREVIOUS WORKS ON THIS SUBJECT, GREATER ATTENTION IS GIVEN TO THE DERIVATION OF MORE EXACT FINITE FORMULAS, TO AN EVALUATION OF THE ORDINARY METHOD OF CALCULATING THE CRITICAL TORQUE WITHOUT TAKING THE EFFECT OF THE SIGN OF THE ECCENTRICITY INTO ACCOUNT, AND TO A COMPARISON OF THE SOLUTION OBTAINED WITH EXPERIMENTAL FINDINGS.

UNCLASSIFIED

NIKOLAYENYA, G.

SO: JPLS 57/65
31 MAY 1973

MISMANAGEMENT IN FERTILIZER PRODUCTION SCORED

[Article by G. Nikolayenko, head of the republic people's control committee department, A. Kolish, senior engineer of the Chirchik branch of the State Institute of the Nitrogen Industry, I. Larin, group supervisor of the State Laboratory of the State Surveillance Committee for Standards and Measuring Equipment, and A. Talov, chairman of the people's control group of the Smarkand China Plant; "Fertilizer Is Not Taken Care Of", Moscow, Sel'skoye Zheniye, Russian, 27 March 1973, p 3]

Mass checking of the production, transportation, and storage of mineral fertilizer by the people's control patrols is continuing in the country. More than 4,000 specialists, and workers and rural correspondents are taking part in unexpected inspections at enterprises and warehouses and on the roads of Uzbekistan. Today, the newspaper publishes the communique from the inspection team which visited the Smarkand Superphosphate Plant.

We encountered many facts of serious losses in fertilizer and in the raw materials for its production in the shops of the enterprises and on its broad territory. One could only be amazed at such mismanagement.

Nearly 700 tons of ammoniated superphosphate was dumped in heaps along the outside walls of one of the warehouses. These "deposits" are the result of an overfilling of the warehouse.

Because of mismanagement and violations of technical methods, the plant has lost thousands of tons of iron pyrite. In the final count, this amount of raw material is sufficient for the production of a large amount of superphosphate.

Some 200 tons of phosphoric flour was spoiled at the plant as a result of careless storage and contamination. The transporter gallery is in an unsatisfactory state and organizational-technical conditions are violated in the superphosphate and ammoniation shops. All of this also leads to large losses in products as the wind disperses it over the territory of the enterprises.

Shortcomings are permitted in the technological process of fertilizer production. For example, as it was learned, complete decomposition of the raw material is not carried out in the superphosphate chamber and the periods of its aging are not followed. The result -- a drop in fertilizer quality. According to the data of the Samarkandskaya Oblast Agrochemical Laboratory, the content of assimilated elements in all five control samples of ammoniated superphosphate was considerably below the norm. The consumers are often supplied with water-logged and deteriorated fertilizer. It has to be pulverized at the farms which leads to additional expenditures and the quality of the fertilizer is also reduced.

An efficient release of product is not organized at the enterprise. The fertilizer is bulk loaded into railroad cars and into vehicles and tractor carts which have not been adapted for carrying it. A large amount of fertilizer is lost as a result and blown away by the wind. The cars are filled, as they say, by eye and later they have to be returned several times from the railroad scales to the shop for additional filling. Valuable time is spent and labor and means are expended. Last year alone the plant paid a fine of 458,000 rubles for railroad car damage.

In the final tally, all of these shortcomings broke down the fertilizer production schedule and led to a disruption of the fertilizer delivery plan and to nonproductive expenditures and losses.

The shops are undergoing modernization at the Samarkand plant and the capacities for ammonophos production are being increased. The construction work plan during 2 months of this year was fulfilled by only 57 percent. Technical documents are not available at a number of below-grade construction sites.

The mass checking of mineral fertilizer production, storage, and transportation in the republic is concluding. The party, soviet, and administrative organs are taking immediate measures based on the materials of the people's controllers. It is important that this be done universally.

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UR 9022

TITLE-- /CAPTION/

NEWSPAPER-- SOVETSKAYA ROSSIYA, JUNE 2, 1970, P 3, COLS 1-4

ABSTRACT-- A PHOTOGRAPH SHOWS A. NIKOLAYEV AND V. SEVAST, YANOV
AT THE INSTRUMENT PANEL OF A SPACE SHIP SIMULATOR.

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USSR

NIKOLAYEV, A.

"Union of Physicians and Technicians"

Minsk, Sovetskaya Belorussiya, 20 Feb 70, p 4

Abstract: The main departments, activities, and apparatus of a leading USSR cancer center, the Belorussian Research Institute of Oncology and Medical Radiology, are described. Equipped with up-to-date x-ray machines, a betatron, diagnostic and pathology laboratories and staffed by well-trained surgeons, nurses, technicians, etc., the Institute provides a full range of services for the prevention, diagnosis, and medical and surgical treatment of all types of cancer. Considerable emphasis is placed on the detection and treatment of precancerous conditions - polyps, ulcers, chronic inflammations, etc.

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Titanium

4

USSR

UDC: 621.791:669.295

RUSSO, V.L. (Doctor of Techn. Sciences), KUDOVYAROV, B.V. and ISKOZ, B.B. (Candidates of Techn. Sciences), NIKOLAYEV, A.A., POLYAKOV, V.M., BARKAN, Z.M., LYAMIN, A.M., and GRINFEL'D, R.A. (Engineers)

"Semi-Automatic Butt Welding of Heavy-Gage Titanium Alloys Without Grooving"

Moscow, Svarochnoye Proizvodstvo, No 10, Oct 71, pp 20-21

Abstract: The most advanced welding techniques are those which provide high-capacity joints with geometric shapes offering maximum strength of the weld metal interlayer on contact with the much stronger base metal. This article discusses manual consumable-electrode welding technology for butt joints of titanium alloy plates, 20 to 100 mm thick. The test material was VT5 titanium alpha-alloy (base metal) with a tensile strength from 75 to 82 kg/mm². VT1 alloy was the filler wire (tensile strength 40-43 kg/mm²). A formula is given for calculating the value at which the weld joint tensile strength will be equal to that of the base metal. A curve is shown to demonstrate the effect of interlayer dimensions on the tensile strength of the weld. The mechanical properties of the interlayer are generally determined by two factors: the properties of the filler or electrode metal (weld metal) and the share of the base metal in the weld metal. Ultrasonic quality control of the test welds revealed faulty fusions in some weld areas. Use was made of a special jig

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USSR

RUSSO, V. L., et al, Svarochnoye Proizvodstvo, No 10, Oct 71, pp 20-21

to maintain the angle of the electrode to the weld, prevent vibrations, and monitor a constant welding rate. The welding was done on a PGT-2 semi-automatic welder. The mechanical properties of both the weld metal and the joint on specimens (6 mm in diameter) include a tensile strength of 64.6 kg/mm², a yield point of 56.5 kg/mm², an elongation of 14 percent, an area reduction of 39.2 percent, a notch toughness (round notch) of 9.8 kg/mm², and a bending angle of 120° (on specimens with longitudinal welds). The value at which the weld joint is equal in tensile strength to that of the base metal was established at 0.1 to 0.35 and the ratio is $\frac{6}{2} \frac{m.}{t.s.} / \frac{w.m.}{t.s.}$.

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- 58 -

USSR

UDC 621.315.592(038.8)

KISELEV, A. M., LEZNEBOKOV, I. I., NAROYCHIK, S. S., NIKOLAYEV, A. A., OSOVSKIY, M. O., SELIVANOV, P. YA., SHKLYAREVSKIY, V. K.

"Procedure for Automatic Regulation of the Process of Noncrucible Zone Melting"

USSR Author's Certificate No 276016, Filed 24 May 68, Published 6 Oct 70
(from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G480)

Translation: A procedure is introduced for automatic regulation of the process of noncrucible zone melting by keeping the ingot diameter constant by means of a signal received as a result of measuring the effect of the projection of the zone on a photoreceiver for controlling the ingot diameter. To improve accuracy of regulation, a profile of the zone located directly on the crystallization front is projected on the photoreceiver for controlling the diameter of the ingot by means of a crystallization-front tracking system.

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USSR

UDC 621.791.753.93:621.014.3:669.295

KUDOYAROV, B. V., Candidate of Technical Sciences, and NIKOLAYEV, A. A.,
POLYAKOV, Y. M. and YAVNO, E. I., Engineers

"Semiautomatic Pulse-Arc Welding of Titanium Alloys Using Consumable
Electrode in Inert Gas"

Moscow, Svarochncye Proizvodstvo, No 11, Nov 70, pp 17-19

Abstract: The authors of this article have developed equipment and technology for semiautomatic pulsed-argon welding of titanium alloys capable of solving problems encountered earlier in this work. The "Impul's-1" device provides for reliable feed of the welding wire and good quality protection of the welding bath. The best results as concerns stability of arc and external formation of welded bead are produced when helium is used as the protective gas. The mechanical properties of the welded seams and joints are equivalent to the properties produced by manual argon-arc welding. The use of the semiautomatic pulsed arc welding device allows the productivity of labor to be increased and the welding deformations to be decreased, mechanizing the welding of structures of titanium and its alloys in all positions.

USSR

N
UDC 621.374.4(086.8)

POPOV, P. S., NIKOLAYEV, A. A., BOBRIN, V. Ye., VASIL'YEV, V. M.

"A Pulse Frequency Divider"

USSR Author's Certificate No 255344, Filed 16 Nov 67, Published 12 Mar 70 (from
RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10G200 P)

Translation: This Author's Certificate introduces a pulse frequency divider based on a transistorized relaxation oscillator circuit which contains a delay line in the feedback circuit. To improve the conversion phase stability, the oscillator also contains a transistorized key which is connected through an emitter follower in the feedback circuit between the delay line and the oscillator transistor base.

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USSR

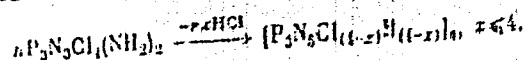
UDC 678.86

NIKOLAYEV, A. F., BONDARENKO, V. M. and BELYAYEV, Yu. P., Leningrad Technological Institute imeni Lennovet

"The Process of Thermal Conversion of 2,2-Diamino-4,4,6,6-tetrachlorotriphosphonitrile"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 5, May 1971, pp 1028-1032

Abstract: Using differential-thermal and thermogravimetric analysis, it was shown that 2,2-diamino-4,4,6,6-tetrachlorotriphosphonitrile is thermally stable to 140°. Higher temperatures (over 150°) cause decomposition with the continuous evolution of hydrogen chloride up to a temperature of 600°. IR spectrum and X-ray diffraction analysis of the title compound and the products of its thermal decomposition verified the process of thermal conversion of the bonds with intermolecular dehydrochlorination and the formation in the final step, of irregular spatial molecules of the general formula $[P_3N_5Cl]_M$. The general reaction for the interval 150-600° can be expressed by the following equation:



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- 61 -

USSR

UDC: 678.746.2-139.01:53

GAL'PERIN, V. M., and NIKOLAYEV, A. F.

"Heat Stable and Impact Resistant Compositions Based on the Copolymers of Styrene and Metacrylic Acid"

Moscow, Plasticheskiye Massy, No 10, 1970, pp 7-9

Abstract: Styrene and methacrylic acid copolymers (SMAA) have low impact resistance. To improve it the SMAA was combined with various rubbers: butadiene-styryl, methylvinylpyridyl (SKS-25-MVP-5 and SKS-20-MVP-10), butadiene-nitrile SKN-26-1,25 and SKN-26-5, and carboxylate butadiene-nitrile rubber. The ingredients were combined on rollers at 160-190°C, the operation lasting 15-20 min. Before mixing, the rubbers were plasticized on cold rollers for 15-20 min. Compositions of SMAA and nonpolar or weakly polar rubbers showed slightly better impact resistance, but were extremely nonhomogeneous due to poor compatibility. This compatibility appeared to improve with higher content of methacrylic acid in the mixture. Best results were obtained with compositions containing the copolymer SMAA, the rubber SNK-26-5, and salts or oxides of the I or II group metals. They exhibited high thermo-physical and durability indicators with excellent chemical stability. They are processable by the die casting method.

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USSR

UDC 678.06-419.8:677.521/:678.643'42'5

DOOS, S. A., NIKOLAYEV, A. F., and BLYAKHAM, YE. M.

"Effect of Temperature on the Properties of New Epoxy-Fiberglass Plastics"

Moscow, Plasticheskiye Massy, No 11, Nov 70, pp 32-34

Abstract: The article presents the results of studied of thermal stability and thermomechanical properties of fiberglass-textolites based on self-setting epoxy resins containing methyl and dimethyl groups, and on these same resins hardened by resol phenol-formaldehyde resin. It was found that the maximum permissible temperatures for intermittent (short-period) use of unstressed fiberglass-textolites should not exceed 200-230°C. These plastics can be used continuously for 180 days or longer without deterioration of physical and mechanical properties at temperatures of up to 160°C. The optimum composition for use under stress at high temperatures is 60 parts by weight of epoxy resin based on dimethyl derivatives of diphenylolpropane, 40 parts by weight of bakelite lacquer, and 1.8 parts by weight of catalyst (salt of triethanolamine and p-toluenesulfo acid). This plastic is deformed to a lesser extent as the temperature is raised than are other compositions, and its softening point is higher.

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1/2 010 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--PREPARATION OF PURE TRIMETAPHOSPHIMIC ACID -U-
AUTHOR--(03)-NIKOLAYEV, A.F., DREYMAN, N.A., ZYRYANOVA, T.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. OBSHC. KHIM. 1970, 40(4); 937-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PHOSPHONITRILE, CHLORIDE, PHOSPHORUS ACID, AMINE DERIVATIVE,
CHEMICAL SYNTHESIS, ION EXCHANGE RESIN/(U)KU2 ION EXCHANGE RESIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/0825 STEP NO--UR/0079/70/040/004/0937/0938
CIRC ACCESSION NO--AP0134558
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0134558

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CYCLIC NA SUB3(PD SUB2 NH)SUB3
TIMES 4H SUB2 O FROM HYDROLYSIS OF (PNCL SUB2)SUB3 WITH COLD NAQAC WAS
REPPTD. FROM AQ. SOLN WITH ETOH AND PURIFIED ON KU2 SULFONIC ACID ION
EXCHANGE RESIN IN H PRIME POSITIVE FORM, TO YIELD THE PURE SOLN. OF THE
FREE ACID THAT IS STABLE IN STORAGE EVEN IN LIGHT; EVAPN. IN VACUO GAVE
H SUB3 (PD SUB2 NH)SUB3 TIMES H SUB2 O, NEEDLES, M. 196DEGREES, PPTD. BY
MEOH. THE ACID CONVERTED TO THE TRI NA SALT AND THIS PASSED IN AQ.
SOLN. OVER KU2 RESIN IN H PRIME POSITIVE FORM GAVE THE PURE ACID
MONOHYDRATE IN 86PERCENT YIELD. FACILITY: LENINGRAD. TEKNOL.
INST. IM. LENSOVETA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 013 UNCLASSIFIED
TITLE--VINYL ACETATE ETHYLENE COPOLYMERS -U-

AUTHOR--(C2)--DANIEL, N.V., NIKOLAYEV, A.F.

COUNTRY OF INFO--USSR

SOURCE--PLAST.MASSY 1970, (6), 7-9 (RUSS)

DATE PUBLISHED-----70

PROCESSING DATE--11DEC70

SUBJECT AREAS--CHEMISTRY, BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--VINYL COMPOUND, ACETATE, ETHYLENE, COPOLYMER, CHEMICAL PRODUCT
PRODUCTION, INDUSTRIAL PRODUCTION, HYDROLYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FAME--3006/0919

STEP NO--UR/0191/70/000/006/0007/0009

CIRC ACCESSION NO--AP0134648

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--POLYMERIZATION OF METHYL METHACRYLATE IN AN EMULSION FORMED BY THE
POTASSIUM SALT OF POLY,N,VINYLSUCCINAMIC ACID -U-
AUTHOR--(03)-NIKOLAYEV, A.F., BELOGORODSKAYA, K.V., ROMANOVA, D.S.

COUNTRY OF INFO--USSR

SOURCE--Zh. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 866-70

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POLYMERIZATION, METHYL METHACRYLATE, EMULSION, REDOX REACTION,
ORGANOPOTASSIUM COMPOUND

2/2 013 UNCLASSIFIED PROCESSING DATE--11DEC70
CIRC ACCESSION NO--AP0134648
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. INDUSTRIAL PRODUCTION, PROPERTIES,
AND HYDROLYSIS OF ETHYLENE VINYL ACETATE COPOLYMERS OF VARIOUS MONOMER
RATIOS ARE REVIEWED BRIEFLY WITH 42 REFS.

UNCLASSIFIED

PROCESSING DATE--20NOV70

2/2 019

CIRC ACCESSION NO--AP0132210

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. EMULSION POLYMN. OF ME
METHACRYLATE AT 50-70DEGREES IN THE PRESENCE OF THE TITLE EMULSIFIER (I)
SHOWED THAT I REACTED WITH THE PROPAGATING RADICALS AND INHIBITED
POLYMN. I TOOK PART IN A REDOX REACTION WITH K SUB2 S SUB2 O SUB8 AND
ENHANCED ITS DECOMPN., BUT AFTER A 20 HR INDUCTION PERIOD GAVE POLY(ME
METHACRYLATE) IN 20PERCENT YIELD. FACILITY: LENINGRAD. TEKHNOL.
INST. IM. LENSOVETA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EFFECT OF ALKALI METAL ION ON THE POLYMERIZATION RATE AND BEHAVIOR
OF N VINYLAMIDOSUCCINIC ACID SALTS -U-
AUTHOR--(02)-NIKOLAYEV, A.F., BONDARENKO, S.G.
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(4), 885-9
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ALKALI METAL, METAL ION, POLYMERIZATION RATE, VINYL COMPOUND,
SUCCINIC ACID, AMIDE, ACTIVATION ENERGY, ELECTROLYTE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/0682 STEP NO--UR/0459/70/012/004/0885/0889
CIRC. ACCESSION NO--AP0124354
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124354

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LI, NA, OR K SALTS OF THE TITLE ACID WERE POLYMD. IN WATER AT 50DEGREES WITH H SUB2 O SUB2 AS THE INITIATOR OR AT 60-70DEGREES IN MECH SOLN. CONTG. (ME SUB2 CCN)SUB2 N SUB2 (I). THE REACTION RATE (V) IN MECH WAS PROPORTIONAL TO I CONCN. (C) AND THE SALT (M) CONCN., $V \text{ EQUALS } K (C) \text{PRIME} 0.5 (M) \text{PRIME} 2$. THE EFFECTIVE ACTIVATION ENERGIES OF POLYMN. DECREASED IN THE SALT CATION ORDER LI IS GREATER THAN NA IS GREATER THAN K. THE MOL. WT. OF THE OBTAINED POLYELECTROLYTES DEPENDED ON THE MONOMER CATION AND THE REACTION CONDITIONS. FACILITY: LENINGRAD. TEKNOL. INST. IM. LENSOVETA, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC: 546.185

N
NIKOLAYEV, A.F., DREYMAN, N.A., and ZYRYANOVA, T.A., Leningrad Technological
Institute imeni Lensovet, Leningrad, Ministry of Higher and Secondary Specialized
Education RSFSR

"Synthesis of Pure Trimetaphosphimic Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 4, Apr 70, pp 937-938

Abstract: Continuing their work on the synthesis of stable trimeta-
phosphimic acid (TMPA), the authors developed a method for its synthe-
sis in an aqueous solution free of admixtures of foreign ions which
affect the stability of the acid, with subsequent isolation in the
crystalline state. The initial product is the Na salt of TMPA,
 $\text{Na}_3(\text{PO}_2\text{NH})_3 \cdot 4\text{H}_2\text{O}$, obtained by hydrolysis of triphosphonitrile chlo-
ride with sodium acetate.

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- 71 -

AN0017047

UR 9030

AUTHOR-- CHECHEL, D., CORRESPONDENT

TITLE-- ASSAULT OF THE ICE BARRIER

NEWSPAPER-- NEDELYA, JANUARY 19-25, 1970, P 2, COLS 1-4

ABSTRACT-- THE AUTHOR INTERVIEWED A. F. NIKOLAYEV, DOCTOR OF TECHNICAL SCIENCES, PROFESSOR OF THE GOR, KIV POLYTECHNIC INSTITUTE, LAUREATE OF THE STATE PRIZE, AND A WELL KNOWN DESIGNER OF ANTARCTIC VEHICLES. HE HEADED THE TRACTOR-SLED TRAIN OF THE 3RD SOVIET ANTARCTIC EXPEDITION THAT REACHED THE GEOMETRICAL CENTER OF THE ANTARCTICA.

NIKOLAYEV REVEALED THAT DESIGNERS OF THE GOR, KIV POLYTECHNIC INSTITUTE HAVE DEVELOPED A SNOW VEHICLE, THE "PINGVIN", WHICH IS UNDERGOING TESTS. THE IDEA OF THE "PINGVIN" VEHICLE NIKOLAYEV PERCEIVED WHEN HE WAS OBSERVING PENGUINS IN THE ANTARCTICA. LIKE PENGUINS, THE VEHICLE IS MADE TO SLIDE ON ITS BOTTOM, MADE OF FLUORINE PLASTIC BY PADDLES EXTENDING FROM ITS BODY.

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NIKOLAYEV ALSO SAID THAT PLANS CALL FOR WINTER TESTING OF A ROTOR-SCREW-PROPELLED VEHICLE WHICH IS FILLED WITH FOAM PLASTIC. THIS VEHICLE CAN TRAVEL OVER WATER, SWAMPS OR ICE. IT WILL BE USED TO PROPELL ICE-CUTTING MACHINES WHICH ARE ALSO DESIGNED BY THE INSTITUTE. ONE SUCH MACHINE, THE GPI-34, CAN CUT SLITS IN ICE AT THE RATE OF QTP METERS PER HOUR.

THREE PHOTOGRAPHS ARE GIVEN WHICH SHOW AN ICE CUTTING MACHINE, THE LFM-GPI-52, A VEHICLE FOR ICE FISHING, AND THE NEW ROTOR-SCREW-PROPELLED VEHICLE, RESPECTIVELY.

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AP0107157

Abstracting Service:

CHEMICAL ABST. 3-70

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Ref. Code

4R0303

123011v Preparation of high-quality pentaplast [poly-
[3,3-bis(chloromethyl)oxacyclobutane]] coatings. Bugorkova,
N. A.; Chegodaev, D. D.; Chereshevich, L. V.; Nikolaev, A. F.

(USSR). *Lakokrasoch. Mater. Ikh Primen.* 1979, (1), 34-7
(Russ). Coatings of the title polymer (I) on steel or Al were ob-
tained by brushing on the I suspensions and heating at 200°. The
coatings were cooled at various rates: in a thermostat at
1-2°/min, in air at 3-7°/min, or by quenching in water. The best
films were obtained by quenching; they had no shrinkage, 16.0%
crystallinity, no internal stresses, 4.5-5.0 kg/mm adhesion
strength to metals, 380-400 kg/cm² tensile strength at break, ~50
kg cm impact strength, 20% elongation at break, and 1×10^{16}
ohm cm vol. resistance at 20°. There was no corrosion of metals
coated with I after 3 months immersion in 30% HNO₃ soln., or 8
months immersions in 37% HCl, 98% H₂SO₄, or 40% NaOH solns.

CPJR

REEL/FRAME
19890552

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Acc. Nr. **AP0055624** Abstracting Service: **CHEMICAL ABST.** **6-70** Ref. Code **480460**

1120197 Kinetic principles of the bulk polymerization of styrene in the presence of trifluoroacetic acid. Nikolayev, A. P.; Belogorodskaya, K. V.; Dukhnenko, E. M.; Popova, L. V.; Karakash, A. F. (Leningrad. Tekhnol. Inst. im. Lensovet, Leningrad. USSR). Vysokomol. Soedin., Ser. B, 1976, 12(1), 24-7 (Russ).
The polymn. rate (V) of $\text{PhCH}=\text{CH}_2$ (I) in PhEt contg. $\text{CF}_3\text{CO}_2\text{H}$ (II) as the catalyst obeys the relation $V = k[\text{concn. II}]^a[\text{concn. I}]^b$ (k is a const.; temp., k in $\text{l. mole}^{-1} \text{sec}^{-1}$, a, b , given): 0° , 9.7×10^{-5} , 1.5, 1.9; -10° , 3.2×10^{-5} , 1.2, 2.8; 20° , 18.7×10^{-5} , 2.2, 1.4. The activation energy is 9.6 kcal/mole. The decrease of a with temp. shows that the solvation of polystyrene ions with II decreases with the temp. The mol. wt. of polystyrene increases with the II concn. CPJR -

REEL/FRAME
19840926

AA0046381- A.G. NIKOLAYEV UR 0482

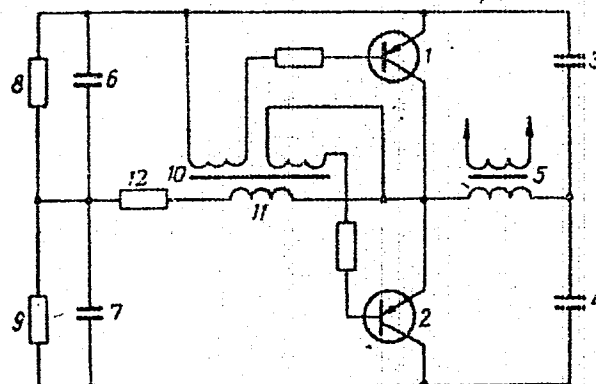
Soviet Inventions Illustrated, Section II Electrical, Derwent,

244484 INVERTER in half bridge arrangement has improved self excitation. As the d.c. supply is connected to the inverter the generator based on transistors (1,2) capacitors (6,7) and commutating transformer (10) becomes active. The separation of output transformer (5) and the commutating transformer improves the conditions of self excitation. Resistors (8,9) serve to correct the duration of output waveform half periods. Resistor (12) regulates the output frequency within certain limits.

12.3.66 as 1061146/24-7. P.E. KONCHENKOV & A.G. NIKOLAEV. A.F. MOZHAISK MILITARY ENGINEERING ACADEMY, Leningrad. (7.10.69) Bul 18/28.5.69. Class 21d². Int.Cl. H 02m.

19781546

AA0046381



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pc

AA0046381

AUTHORS: Konchenkov, P. Ye.; Nikolayev, A. G.

Leningradskaya Voyennaya Inzhener Naya Krasnoznamennaya Akademiya im.
A. F. Mozhayskogo

19781548

3/3

USSR

NIKOLAYEV, A. I., Professor, Tashkent Medical Institute

"The Effect of Antibodies Against Drugs on the Effectiveness of Therapy"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 9, 1971, pp 3-5

Abstract: Antibody formation plays an important role in the development of drug allergies. It not only results in increased sensitivity, but also reduces the biological effectiveness of medications. This is of particular relevance in prolonged chemo therapy of the chronically ill.

Of great theoretical and practical significance are the few studies conducted on the effect of antibodies to antibiotics on the bactericidal effect of the antibiotics. Clinical observations of patients treated with penicillin showed that the effectiveness of the medication decreases as the antibodies to penicillin increase. This observation was confirmed in similar studies with streptomycin, chloramphenicol, and antituberculosis preparations. The longer a patient was treated with a particular preparation, the more antibodies built up, and the less effective the treatment became until progress was eventually halted. The length of time for which a medication is prescribed should be determined on an individual basis depending on the degree of

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USSR

NIKOLAYEV, A. I., and PLATONOVA, L. Ye.

Metody Opredeleniya Autoantitel i ikh Sravnitel'naya Otsenka (Methods of Determining Autoantibodies and Their Comparative Evaluation), Tashkent, "Meditsina," 1971, 112 pp

Translation: Annotation: Successful development of research to study the role of autoimmune processes in the pathogenesis of diseases is linked first of all to developing simple, sensitive methods of detecting autoantibodies. A large number of reactions are suggested, many of which are cumbersome labor-consuming, and abound in errors, while some of them are not sufficiently sensitive. Antigens prepared by various methods are employed to detect autoantibodies. The frequency of detection of autoantibodies during the same illness differs according to different authors. For this reason it became necessary to generalize, systematize, and make a comparative evaluation of the methods, descriptions of which are scattered in numerous periodicals.

Modern methods of detecting autoantibodies are presented in the monograph and a comparative evaluation of the methods is given.

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NIKOLAYEV, A. I., and PLATONOVA, L. Ye., Metody Opredeleeniya Autoantitel i ikh Sravnitel'naya Otsenka (Methods of Determining Autoantibodies and Their Comparative Evaluation), Tashkent, "Meditsina," 1971, 112 pp

The book is intended for a broad range of scientific workers and doctors of various specializations.

Table of Contents:

Introduction	3
Autoantibodies and the Mechanism of Their Formation	5
Methods of Detecting Autoantibodies	11
Comparative Evaluation of Methods for Detecting Circulating Autoantibodies	95
Some Methods of Obtaining Antigens From Organs and Tissues for Serological Reactions	105

Pharmacology and Toxicology

USSR

UDC 615.28.015.46.07

NIKOLAYEV, A. I., and USMANOVA, I. YA., Tashkent Medical Institute

"On the Appearance of Antibodies to Pesticides"

Moscow, Laboratornoye Delo, Vol 11, 1971, pp 676-678

Abstract: A report is presented of the appearance of antibodies to the commonly used pesticides methyl mercaptophos and hexachloran when administered orally to 20 rabbits for 14 days. The rabbits were divided into four groups of five each. The first group was given hexachloran in a dose of 10 mg/kg; the second, methyl mercaptophos, 10 mg/kg; the third, a mixture of the two, 5 mg/kg each; and the fourth was a control group. The blood serum of rabbits was checked periodically up to 120 days after the administration of pesticides. The presence of antibodies was determined by two reactions: precipitation of an antigen-antibody complex in an ammonium sulfate solution, and passive hemagglutination. Antibodies to the pesticides appeared beginning on the sixth day after administration of the pesticides. Thereafter, antibody titers varied, with higher ones (1:80) on the 10th and 14th days. After that, there was a gradual reduction in the titers of antibodies and, after 3 months, antibodies were nearly absent. There was a more intensive formation of antibodies to hexachloran than to methyl mercaptophos.

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NIKOLAYEV, A. I., and USMANOVA, I. YA., Laboratornoye Delo, Vol 11, 1971, pp 676-678

Human patients in contact with pesticides in the course of their work were also observed. Antibodies appeared in 65 of the 102 patients observed. The reaction to the antibodies was negative when there was no contact with pesticides for 6 months or more.

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- 54 -

USSR

NIKOLAYEV, A. I., Professor, Tashkent Medical Institute

"Clinico-Experimental Data on the Role of Circulating Antibodies in the Pathogenesis of Diseases"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 10, Oct 70, pp 74-81

Abstract: In most pathological processes, circulating antibodies acting against the tissues of the organism itself (so-called autoantibodies) become active. Specially developed serological reactions and methods, some of which are highly sensitive, have been used to elucidate the nature and activity of these autoantibodies. Some researchers hold that autoantibodies possess a protective function; others think they are aggressive and aggravate the course of a disease. In the first case, ways should be found to enhance the possible protective action; in the second case, methods will have to be developed to suppress the synthesis of these antibodies. The present paper is devoted to an analysis of arguments and data from the literature and from the author's own work to elucidate the role of circulating autoantibodies in the course of disease. For instance, the question of whether autoantibodies exist in all healthy people and animals,

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USSR

NIKOLAYEV, A. I., Meditsinskiy Zhurnal Uzbekistana, No 10, Oct 70, pp 74-81

particularly on the cellular level, requires further study. Establishment of the occurrence of autoantibodies in sick persons depends on the sensitivity of the method used and varies over a wide range. Correlation between clinicomorphological indices and concentration of autoantibodies will depend on the intensity at which the antibodies are synthesized and on their saturation in the organs and tissues at the time of the investigation. Extremely simple and sensitive methods have been developed to test the effect of autoantibodies on the enzyme activity in surviving tissues, particularly their effect on the oxidation-reduction processes in which many enzymes participate. The cytotoxic effect of autoantibodies, as detected radiologically or as obtained by penicillin, streptomycin, sarcolysin, and carcinogenic substances, was studied. In all cases, the respiration of the surviving culture from the liver of healthy animals was suppressed, as was the dehydrogenase activity. This cytotoxic effect was enhanced with an increasing concentration of the autoantibodies. There are probably several mechanisms on which the cytotoxic and protective effects of autoantibodies are based, one associated with enzymes, hormones, and other biologically active substances and the blocking and damaging of the cell surfaces in the organism,

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USSR

NIKOLAYEV, A. I., Meditsinskiy Zhurnal Uzbekistana, No 10, Oct 70, pp 74-81

the other involving the toxic products arising during the breakdown of tissues, such as "denatured" protein.

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USSR

UDC 612.017.1.014.46:615.357.453+612.017.1.014.482

NIKOLAYEV, A. I., SAFAYEVA, I. B., and ROZGON, M. I., Tashkent Medical Institute

"Comparative data on the Effects of Hydrocortisone and Irradiation on Immunogenesis"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 8, Aug 70, pp 64-68

Abstract: The effects of hydrocortisone (90 mg/kg) and irradiation (700 r) on the number of live nuclear and antibody-forming cells in the spleen of intact mice and mice immunized with sheep erythrocytes were studied at various times before and after exposure to the above factors. The effects of irradiation and hydrocortisone during the first 10 days were of the same type. As compared to the controls, the number of live nuclear cells in irradiated mice and by a factor of 8 in mice receiving hydrocortisone. Twenty-four hours after irradiation and injection of cortisone, the absolute number of antibody-forming cells was the same as in the control. After 72 hours, these cells decreased in animals receiving hydrocortisone to one-third the number in controls, whereas in irradiated mice the number was approximately the same. Irradiation injures mainly the poorly differentiated cells of lymphoid tissue, severely depresses the proliferation of nuclear and antibody-forming cells, and lengthens the inductive phase of antibody formation. Hydrocortisone destroys all types of lymphoid cells, has little

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USSR

NIKOLAYEV, A. I., et al, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii,
No 8, Aug 70, pp 64-68

effect on the proliferation of antibody-forming cells during the first few days
after immunization, and has no significant influence on the duration of the
inductive phase of antibody formation.

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- 42 -

USSR

UDC 615.285.7.099.097

NIKOLAYEV, A. I., SUBKHANKULOVA, F. B., and GELLER, I. S., Chair of General and Radiation Hygiene, Tashkent Medical Institute

"Immune Reactions During Intoxication With the Pesticides Methylmercaptophos, Phosphamide, Aldrin, and Monuron"

Moscow, Farmakologiya i Toksikologiya, Vol 33, No 6, Nov/Dec 70, pp 737-741

Abstract: Changes in the immunological specificity of tissue proteins in mice and rats poisoned with methylmercaptophos, phosphamide, aldrin, and monuron were studied. An alteration in the immunological specificity of liver proteins was noted on the first day after intoxication due to chemical binding of pesticides by proteins and, on subsequent days, to destructive changes in the tissues. This sequence was similar to that established by Nikolayev et al in a study of autoimmune processes upon introduction into the organism of antibiotics, carcinogens, and substances with antitumor activity. Anti-hepatic autoantibodies appeared in the blood serum of animals on the 7th day after initiation of intoxication, reaching their maximum titer on the 30th day of the experiment and decreasing in concentration thereafter during the continued action of the pesticides. The titer of antihepatic autoantibodies in

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NIKOLAYEV, A. I., et al, Farmakologiya i Toksikologiya, Vol 33, No 6, Nov/Dec 70, pp 737-741

the blood serum in connection with continuous administration of the pesticides was studied on rabbits given methylmercaptophos or phosphamide for 15 days and rats receiving monuron for 4 months. Blood sera containing antihepatic auto-antibodies depressed the resorption and excretory function of the liver in healthy animals, produced morphological changes in the liver, and inhibited redox processes in tissues.

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Forming

UDC 621.791.053.6:669.715:621.771

USSR

KURKIN, S. A., Doctor of Technical Sciences, KLOCHKOV, N. A. and NIKOLAYEV,
A. I., Engineers

"Rolling With Preliminary Heating of Butt Seams of AMg6M Alloy"

Moscow, Svarochnoye Proizvodstvo, No 11, Nov 70, pp 24-25

Abstract: Welded joints of AMg6M alloy are unsuitable for deep drawing or stamping due to tearing of the welded seam, resulting from the presence of a dendritic structure and large separations of the β -phase in the fusion zone. This problem can be eliminated by rolling seams in a roller with local heating, thus improving the properties of the metal in and around the welded seam. The increased homogeneity of the mechanical properties produced by rolling increases the reliability of these structures under biaxial extension conditions and allows parts of complex shape to be stamped from welded blanks.

Miscellaneous

USSR

UDC 669.35'26'296:621.78

REVINA, N. I., NOVIKOV, A. I., NIKOLAYEV, A. K., and
ROZENBERG, V. M., State Scientific Research and Planning
Institute of Alloys and Nonferrous Metal Processing

"Investigation of the Properties of Low Alloys of Cu - Cr - Zr
System"

Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Zavedeniy,
Tsvetnaya Metallurgiya, No 6, 1973, pp 106-110

Abstract: A study was made of the properties of alloys of the
Cu - Cr - Zr system with different correlation of alloying com-
ponents at their total content of 0.4 mass%. Test results on
wire (1.5 mm in diam.) and thin-plate (0.15 mm thick) specimens
are discussed by reference to diagrams showing the change of
mechanical properties after different treatments, the annealing
effect at different temperatures, and the testing temperature
effect on strength and plasticity. Anomalous property changes
at Cr and Zr concentrations corresponding to the formation of
ZrCr₂ were not observed. The highest strengthening after strain-

USSR

REVINA, N. I., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, No 6, 1973, pp 106-110

-hardening and aging was attained in Cu — Cr alloys with up to 0.1 wt% Zr. The ultimate strength of Cu alloy with 0.33 % Cr and 0.07 % Zr, after strain-hardening and aging, was 60 kg/mm² at not less than 90 % of Cu electroconductivity. The plasticity of ternary alloys remained high in the whole temperature interval of tests. Four figures, one table, six bibliographic references.

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USSR

UDC 669.3'26'295.018.9.4

NIKOLAYEV, A. K., BOGDANOV, D. R.

"Purification of Copper-Chromium and Copper-Titanium Alloy of Slag Inclusions Using Filtration Through Chunk Filters"

Tr. N.-i. i Proekt. In-ta Splavov i Obrabotki Tsvet. Met. [Works of Scientific Research and Planning Institute for Alloys and Processing of Nonferrous Metals], No 35, 1971, pp 20-22, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G376 by the author).

Translation: Results are presented from work on purification of Cu-Cr and Cu-Ti alloys of slag inclusions by filtration of the melt through chunk filters. 1 Figure; 2 Tables; 2 Biblio. Refs.

1/1

- 69 -

172 015 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--CHANGE IN THE COMPOSITION OF THE METAL AND SLAG DURING THE OXYGEN
BLOWING OF PIG IRON WITH VARIOUS SILICON AND MANGANESE CONTENTS -U-
AUTHOR--(03)-ZARVIN, E.YA., NIKOLAYEV, A.L., VOLOVICH, M.I.
COUNTRY OF INFO--USSR
SOURCE--IZVEST. V.U.Z., CHERNAYA MET., 1970, (2), 47-52
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--PIG IRON, SLAG, SILICON CONTAINING ALLOY, MANGANESE CONTAINING
ALLOY, BIBLIOGRAPHY, PHOSPHORUS, DESULFURIZATION, METAL OXYGEN
CONVERSION
CONTROL MARKING--NO RESTRICTIONS
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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0124254

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONVERSION OF PIG IRON CONTG. VARIOUS PROPORTIONS OF SI AND MN IN A 30-60 TON G CONVERTER AND THE KINETICS OF SLAG FORMATION WERE STUDIED WITH SPECIAL REF. TO CHANGES TAKING PLACE IN THE COMPOSITION OF THE METAL AND THE SLAG DURING VARIOUS STAGES OF THE PROCESS AND THEIR RELATION TO TEMP. AND BLOWING CONDITIONS. THUS THE DEGREE OF P AND S REMOVAL WAS VERY SENSITIVE TO THE COMPOSITION OF THE PIG IRON, PARTICULARLY ITS MN AND SI CONTENT. IN PRINCIPLE PIG IRON CONTG. ONLY A SMALL QUANTITY OF MN MAY BE USED SUCCESSFULLY IN THE CONVERSION PROCESS.

UNCLASSIFIED

USSR

Instrumentation and Equipment

UDC: 621.762.002.5(088.8)

PAVLOVSKAYA, Ye. I., TIKHONOV, G. F., NIKOLAYEV, A. N., SHTUTMAN, B. A.,
KHRENOV, B. A., GORYACHEVA, Z. V.

"Device for Feeding of Powder into Rolls of a Rolling Mill"

USSR Author's Certificate Number 352685, Filed 8/06/70, Published 26.10/72
(Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No
8G450).

Translation: The device suggested contains a hopper and a feeder. In order
to increase the quality of the product produced, the feeder is made in the
form of a strip transporter connected through a drive to the rolls of a roll-
ing mill.

USSR

NIKOLAYEV, A. N., SHMOTKIN, YU. A.

UDC 621.762.4.001

"Hot Rolling of Billets Premolded from Metal Powders"

Tr. Gor'kov, politekhn. in-ta (Works of Gor'kiy Polytechnic Institute), Vol 26, No 15, 1970, pp 18-23 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G397)

Translation: The compacting process during hot rolling of metal powders can be described by the equation: $p = m\sigma_s \rho \ln \rho / (1-\rho)$, where ρ is the relative density; P is the specific pressure; σ_s is the yield point; m is a coefficient which can be taken equal to 2.5. For a relative density of 0.9 above which interparticle recrystallization takes place, $P = 5\sigma_s$. The total specific pressure is made up of the specific pressure required for compacting and the specific pressure of adherence. It is equal to $8\sigma_s$. A significant increase in the elongation per unit length is established for hot rolled tapes in a defined strain and temperature interval connected with the process of interparticle recrystallization. There are 2 illustrations, 1 table, and a 6-entry bibliography.

1/1

- 46 -

USSR

UDC 599.323.4

YERDAKOV, L. N., GLOTOV, I. N., and NIKOLAYEV, A. S., Institute of Biology,
Siberian Department, Academy of Sciences USSR, Novosibirsk

"Dynamics of the Mobility of Murine Rodents and the Effect on Mobility of
Some Abiotic Factors"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya
Biologicheskikh Nauk, No 10 (190), 1971, pp 161-168

Abstract: Field study of 12 species of voles mice, and other rodents (*Sicista*
betulina, *Apodemus agrarius*, *Micromys minutus*, *Phodopus sungorus*, *Cricetus*
cricetus, *Clethrionomys glareolus*, *Clethrionomys rutilus*, *Clethrionomys rufo-*
canus, *Arvicola terrestris*, *Microtus gregalis*, *Microtus agrestis*, *Microtus*
oeconomus) in forest biocenoses in the northern part of the Baraba Lowland
(Western Siberia). Each species develops a definite seasonal rhythm in its
movements about its range, the determining factors being the local climate
and ecology of the species. Species periodicity is fairly conservative and
it is little affected by slight fluctuations in temperature and moisture,
although it can shift in time as a result of abrupt climatic changes. Sig-
nificant changes in the rhythm of rodent mobility take place only when
climatic factors coincide or nearly coincide with peak activity.

1/1

- 74 -